

REMARKS

Claims 1-34 are pending in the application. Claims 1-34 are rejected under 35 U.S.C. §102(e). Applicant respectfully traverses these rejections for at least the reasons stated below and respectfully requests the Examiner to reconsider and withdraw these rejections.

I. REJECTIONS UNDER 35 U.S.C. §102(e):

The Examiner has rejected claims 1-34 under 35 U.S.C. §102(e) as being anticipated by Hertweck et al. (U.S. Patent No. 6,789,511) (hereinafter "Hertweck"). The Examiner has further rejected claims 1-34 under 35 U.S.C. §102(e) as being anticipated by zur Loye et al. (U.S. Patent No. 6,561,157) (hereinafter "zur Loye"). Applicant respectfully traverses these rejections for at least the reasons stated below and respectfully requests that the Examiner reconsiders and withdraws these rejections.

For a claim to be anticipated under 35 U.S.C. §102, each and every claim limitation must be found within the cited prior art reference and arranged as required by the claim. M.P.E.P. §2131.

A. Claims 1-34 are not properly rejected under 35 U.S.C. §102(e) as being anticipated by Hertweck.

Applicant respectfully asserts that Hertweck does not disclose "a dual fuel engine, said engine supplied with diesel fuel and at least one secondary fuel, said engine including one or more cylinders in which one or more pistons reciprocate, each of said one or more cylinders being provided with diesel injection means for injecting the diesel fuel into the cylinder during an appropriate stroke of the piston and at least one air inlet valve, said valve moving to an open condition during said appropriate stroke of the piston to permit air flow therethrough, characterized in that each cylinder of the engine is further provided with secondary fuel injection means for injecting the secondary fuel into the cylinders, the secondary fuel injection means being independent of the diesel fuel injection means and air inlet valves" as recited in claim 1. The Examiner cites element 13 of Hertweck as disclosing a second fuel

injecting means; element 5 of Hertweck as disclosing a first injecting means and element 2 of Hertweck as disclosing an inlet valve. Office Action (12/22/2006), page 2. Applicant respectfully traverses.

Hertweck instead discloses an additional injection valve 13 may be provided in the induction pipe 11, with the injection system 5 arranged in the cylinder head 4, the additional injection valve 13 being arranged between a throttle valve 14 arranged in the induction pipe 11 and the intake valve 2. Column 4, lines 21-25. Hertweck further discloses that the present method uses a fuel which, on account of the particular fuel characteristics, may achieve a favorable efficiency during combustion by compression ignition and may have consumption advantages over conventional combustion methods using conventional fuels. Column 2, lines 40-45. Hertweck additionally discloses that the fuel used may be straight-run naphtha, which is also known as raw gasoline. Column 2, lines 45-46.

There is no language in Hertweck that discloses a dual fuel engine, the engine supplied with diesel fuel and at least one secondary fuel. The Examiner has not cited to any passage that discloses a secondary fuel. Instead, the Examiner cites to two injection valves which does not necessarily conclude injecting two types of fuel. Further, there is no language in Hertweck that discloses a dual fuel engine, the engine supplied with diesel fuel and at least one secondary fuel, the engine including one or more cylinders in which one or more pistons reciprocate, each of the one or more cylinders being provided with diesel injection means for injecting the diesel fuel into the cylinder during an appropriate stroke of the piston and at least one air inlet valve, the valve moving to an open condition during the appropriate stroke of the piston to permit air flow therethrough, characterized in that each cylinder of the engine is further provided with secondary fuel injection means for injecting the secondary fuel into the cylinders. Neither is there any language in Hertweck that discloses that the secondary fuel injection means being independent of the diesel fuel injection means and air inlet valves. Thus, Hertweck does not disclose all of the limitations of claim 1, and thus Hertweck does not anticipate claim 1. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "a vehicle having a dual fuel engine fitted therein, said engine supplied with diesel fuel and at least one secondary fuel, said engine including one or more cylinders in which one or more pistons reciprocate, each of said one or more cylinders being provided with diesel injection means for injecting the diesel fuel into the cylinder during an appropriate stroke of the piston and at least one air inlet valve, said valve moving to an open condition during said appropriate stroke of the piston to permit air flow therethrough, characterized in that each cylinder of the engine is further provided with secondary fuel injection means for injecting the secondary fuel into the cylinders, the secondary fuel injection means being independent of the diesel fuel injection means and air inlet valves" as recited in claim 29. The Examiner cites element 13 of Hertweck as disclosing a second fuel injecting means; element 5 of Hertweck as disclosing a first injecting means and element 2 of Hertweck as disclosing an inlet valve. Office Action (12/22/2006), page 2. Applicant respectfully traverses.

Hertweck instead discloses an additional injection valve 13 may be provided in the induction pipe 11, with the injection system 5 arranged in the cylinder head 4, the additional injection valve 13 being arranged between a throttle valve 14 arranged in the induction pipe 11 and the intake valve 2. Column 4, lines 21-25. Hertweck further discloses that the present method uses a fuel which, on account of the particular fuel characteristics, may achieve a favorable efficiency during combustion by compression ignition and may have consumption advantages over conventional combustion methods using conventional fuels. Column 2, lines 40-45. Hertweck additionally discloses that the fuel used may be straight-run naphtha, which is also known as raw gasoline. Column 2, lines 45-46.

There is no language in Hertweck that discloses a vehicle having a dual fuel engine fitted therein. Neither is there any language in Hertweck that discloses a dual fuel engine fitted therein, the engine supplied with diesel fuel and at least one secondary fuel. Neither is there any language in Hertweck that discloses a dual fuel engine fitted therein, the engine supplied with diesel fuel and at least one secondary fuel, the engine including one or more cylinders in which one or more pistons reciprocate, each of the one or more cylinders being provided with diesel injection

means for injecting the diesel fuel into the cylinder during an appropriate stroke of the piston and at least one air inlet valve, the valve moving to an open condition during the appropriate stroke of the piston to permit air flow therethrough, characterized in that each cylinder of the engine is further provided with secondary fuel injection means for injecting the secondary fuel into the cylinders. Neither is there any language in Hertweck that discloses that the secondary fuel injection means being independent of the diesel fuel injection means and air inlet valves. Thus, Hertweck does not disclose all of the limitations of claim 29, and thus Hertweck does not anticipate claim 29. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "an integrated control unit (ICU) for controlling the operation of a dual fuel engine, said engine supplied with diesel fuel and at least one secondary fuel, said engines including one or more cylinders in which one or more pistons reciprocate, each of said one or more cylinders being provided with diesel injection means for injecting the diesel fuel into the cylinder during an appropriate stroke of the piston and at least one air inlet valve said valve moving to an open condition during said appropriate stroke of the piston to permit air flow therethrough, each cylinder of the engine being further provided with secondary fuel injection means for injecting the secondary fuel into the cylinders, the integrated control unit providing independent control for the operation of the secondary fuel injection means and the diesel fuel injection means" as recited in claim 30. The Examiner cites element 13 of Hertweck as disclosing a second fuel injecting means; element 5 of Hertweck as disclosing a first injecting means and element 2 of Hertweck as disclosing an inlet valve. Office Action (12/22/2006), page 2. Applicant respectfully traverses.

Hertweck instead discloses an additional injection valve 13 may be provided in the induction pipe 11, with the injection system 5 arranged in the cylinder head 4, the additional injection valve 13 being arranged between a throttle valve 14 arranged in the induction pipe 11 and the intake valve 2. Column 4, lines 21-25. Hertweck further discloses that the present method uses a fuel which, on account of the particular fuel characteristics, may achieve a favorable efficiency during combustion

by compression ignition and may have consumption advantages over conventional combustion methods using conventional fuels. Column 2, lines 40-45. Hertweck additionally discloses that the fuel used may be straight-run naphtha, which is also known as raw gasoline. Column 2, lines 45-46.

There is no language in Hertweck that discloses an integrated control unit (ICU) for controlling the operation of a dual fuel engine. Neither is there any language in Hertweck that discloses an integrated control unit (ICU) for controlling the operation of a dual fuel engine, the engine supplied with diesel fuel and at least one secondary fuel. Neither is there any language in Hertweck that discloses an integrated control unit (ICU) for controlling the operation of a dual fuel engine, the engine supplied with diesel fuel and at least one secondary fuel, the engine including one or more cylinders in which one or more pistons reciprocate, each of the one or more cylinders being provided with diesel injection means for injecting the diesel fuel into the cylinder during an appropriate stroke of the piston and at least one air inlet valve the valve moving to an open condition during the appropriate stroke of the piston to permit air flow therethrough, each cylinder of the engine being further provided with secondary fuel injection means for injecting the secondary fuel into the cylinders. Neither is there any language in Hertweck that discloses that the integrated control unit providing independent control for the operation of the secondary fuel injection means and the diesel fuel injection means. Thus, Hertweck does not disclose all of the limitations of claim 30, and thus Hertweck does not anticipate claim 30. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "a method of converting a diesel engine to a dual fuel engine, said engine supplied with diesel fuel and at least one secondary fuel, said engine provided with one or more cylinders in which one or more pistons reciprocate with injection means for injecting diesel fuel into the cylinder during an appropriate stroke of the piston and at least one air inlet valve, said valve moving to an open condition during said appropriate stroke of the piston to permit air flow therethrough, characterized in that said method includes the step of providing each cylinder of the engine with secondary fuel injection means for

injecting the secondary fuel into the cylinders, the secondary fuel injection means being provided independently to the diesel fuel injection means" as recited in claim 32. The Examiner cites element 13 of Hertweck as disclosing a second fuel injecting means; element 5 of Hertweck as disclosing a first injecting means and element 2 of Hertweck as disclosing an inlet valve. Office Action (12/22/2006), page 2. Applicant respectfully traverses.

Hertweck instead discloses an additional injection valve 13 may be provided in the induction pipe 11, with the injection system 5 arranged in the cylinder head 4, the additional injection valve 13 being arranged between a throttle valve 14 arranged in the induction pipe 11 and the intake valve 2. Column 4, lines 21-25. Hertweck further discloses that the present method uses a fuel which, on account of the particular fuel characteristics, may achieve a favorable efficiency during combustion by compression ignition and may have consumption advantages over conventional combustion methods using conventional fuels. Column 2, lines 40-45. Hertweck additionally discloses that the fuel used may be straight-run naphtha, which is also known as raw gasoline. Column 2, lines 45-46.

There is no language in Hertweck that discloses a method of converting a diesel engine to a dual fuel engine, the engine supplied with diesel fuel and at least one secondary fuel. Neither is there any language in Hertweck that discloses a method of converting a diesel engine to a dual fuel engine, the engine supplied with diesel fuel and at least one secondary fuel, the engine provided with one or more cylinders in which one or more pistons reciprocate with injection means for injecting diesel fuel into the cylinder during an appropriate stroke of the piston and at least one air inlet valve, the valve moving to an open condition during the appropriate stroke of the piston to permit air flow therethrough, characterized in that the method includes the step of providing each cylinder of the engine with secondary fuel injection means for injecting the secondary fuel into the cylinders. Neither is there any language in Hertweck that discloses that the secondary fuel injection means being provided independently to the diesel fuel injection means. Thus, Hertweck does not disclose all of the limitations of claim 32, and thus Hertweck does not anticipate claim 32. M.P.E.P. §2131.

Claims 2-28, 31 and 33-34 each recite combinations of features of independent claim 1, and hence claims 2-28, 31 and 33-34 are not anticipated by Hertweck for at least the above-stated reasons that claim 1 is not anticipated by Hertweck.

Claims 2-28, 31 and 33-34 recite additional features, which, in combination with the features of the claims upon which they depend, are not anticipated by Hertweck.

For example, Hertweck does not disclose "characterized in that control of the operation of the secondary fuel injection means is independent of the operation of the diesel injection means" as recited in claim 2. The Examiner simply asserts that Hertweck discloses the above-cited claim limitation without providing any evidence. In order to establish a *prima facie* case of anticipation, the Examiner must provide evidence that each and every claim limitation is found within Hertweck. M.P.E.P. §2131. Since the Examiner has not provided any such evidence, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 2. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that the secondary fuel injection means are controlled to introduce the secondary fuel in the one or more cylinders on the appropriate stroke of the piston reciprocating therein" as recited in claim 3. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 3. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that the engine is provided with two fuel supply tanks for the diesel fuel and secondary fuel respectively, each fuel being delivered to the engine through separate

supply means" as recited in claim 4. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 4. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that injection of the secondary fuel into the one or more cylinders occurs substantially simultaneously to injection of the diesel fuel into said cylinders" as recited in claim 5. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 5. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that means are provided for sensing and/or controlling one or more engine operating conditions" as recited in claim 6. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 6. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that sensing means are provided for sensing any or any combination of exhaust

emissions, exhaust gas particulate density, throttle position, temperature of the secondary fuel being delivered to the engine and/or the engine itself, turbo pressure, airflow velocity and pressure, secondary fuel gauge, engine speed, position of a flow control means and/or position of the diaphragm in the vaporizing means" as recited in claim 7. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 7. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that flow control means are provided for regulating the amount of secondary fuel flowing into the engine" as recited in claim 8. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 8. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that control of the flow of the secondary fuel to the secondary fuel injection means by said flow control means is regulated dynamically according to one or more sensed engine operating characteristics" as recited in claim 9. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this

limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 9. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that the flow control means are provided in fuel supply pipes supplying secondary fuel to the engine" as recited in claim 10. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 10. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that an output of the flow control means is coupled to an input of a multi-output divider for dividing a singular flow of secondary fuel into a plurality of flows, the number of flows corresponding to the number of cylinders in the engine and each of said flows being coupled to the secondary fuel injection means" as recited in claim 11. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 11. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that the flow control means includes a piston, the position of which is changed to alter the amount of secondary fuel flowing therethrough" as recited in claim 12. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and

every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 12. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that vaporizing means is provided in fuel supply means for delivering the secondary fuel to the engine" as recited in claim 13. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 13. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that an integrated control unit (ICU) is provided for controlling one or more engine operating conditions" as recited in claim 14. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 14. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that the ICU includes any or any combination of: a) one or more inputs in communication with sensing means disposed in and/or around the engine for sensing one or more operating characteristics thereof; b) means capable of receiving and/or processing a user input; c) calibration means through which maintenance and adjustment of one or more algorithms and/or operating parameters of the ICU can be

achieved; d) one or more outputs for displaying data relating to the operating characteristics of the engine; e) one or more outputs for connection to one or more dynamically adjustable components of the engine for dynamic control thereof during engine operation" as recited in claim 15. The Examiner has not specifically addressed these limitations. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed these limitations, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 15. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that the ICU controls the flow of secondary fuel through a diaphragm in the vaporizing means and/or the temperature of a heating element provided therein" as recited in claim 16. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 16. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that the ICU controls both the flow control means and the diaphragm in the vaporizing means for regulating the flow of the secondary fuel through each component" as recited in claim 17. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 17. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that operation of the ICU is substantially continuous" as recited in claim 18. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 18. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that the ICU includes memory means for storing one or more pre-determined engine operating conditions therein" as recited in claim 19. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 19. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that the memory means includes one or more algorithms which can be executed by processing means when pre-determined conditions are met" as recited in claim 20. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 20. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that said pre-determined conditions include any or any combination of when the engine is started, when the secondary fuel runs out and/or when the load on the engine reaches a pre-determined level or is outside a pre-determined level" as recited in claim 21. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 21. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that the calculations resulting from executing said algorithms are used to set the vaporizer diaphragm or piston of the flow control means to an optimum level for the detected operating conditions" as recited in claim 22. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 22. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that at least one recalibration algorithm is provided for allowing the ICU to adjust its operation as the engine and its associated component undergo wear" as recited in claim 23. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the

Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 23. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that data input from sensing means to the ICU is compared to pre-determined engine operating conditions and the ICU outputs data to adjust the flow of the secondary fuel to the engine and/or one or more other engine operating parameters" as recited in claim 24. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 24. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that a secondary fuel limiter is provided to prevent "over-powering" of the engine" as recited in claim 25. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 25. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that emergency shut off valves are provided in fuel supply means which deliver the diesel fuel and the secondary fuel to the engine" as recited in claim 26. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this

limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 26. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that traction control means are provided and, on detection of a loss of traction, the supply of secondary fuel to the engine is reduced or cut off" as recited in claim 27. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 27. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that the secondary fuel is LPG." as recited in claim 28. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 28. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that control of the operation of at least said secondary fuel injection means is in response to one or more sensed engine operating characteristics" as recited in claim 31. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the

Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 31. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that the ICU controls the flow of secondary fuel through a diaphragm in the vaporizing means and/or the temperature of a heating element provided therein" as recited in claim 33. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 33. M.P.E.P. §2131.

Applicant further asserts that Hertweck does not disclose "characterized in that the ICU controls both the flow control means and the diaphragm in the vaporizing means for regulating the flow of the secondary fuel through each component" as recited in claim 34. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 34. M.P.E.P. §2131.

As a result of the foregoing, Applicant respectfully asserts that not each and every claim limitation was found within Hertweck, and thus claims 1-34 are not anticipated by Hertweck. M.P.E.P. §2131.

B. Claims 1-34 are not properly rejected under 35 U.S.C. §102(e) as being anticipated by zur Loye.

Applicant respectfully asserts that zur Loye does not disclose "a dual fuel engine, said engine supplied with diesel fuel and at least one secondary fuel, said engine including one or more cylinders in which one or more pistons reciprocate,

each of said one or more cylinders being provided with diesel injection means for injecting the diesel fuel into the cylinder during an appropriate stroke of the piston and at least one air inlet valve, said valve moving to an open condition during said appropriate stroke of the piston to permit air flow therethrough, characterized in that each cylinder of the engine is further provided with secondary fuel injection means for injecting the secondary fuel into the cylinders, the secondary fuel injection means being independent of the diesel fuel injection means and air inlet valves" as recited in claim 1. The Examiner asserts that zur Loye discloses a secondary fuel injection means for injecting second fuel as a function of a load, which is independent from the first injection means and the inlet valve. Office Action (12/22/2006), page 2. Applicant respectfully traverses.

zur Loye instead discloses that the above objects and others are achieved by providing a multi-mode internal combustion engine capable of operating in a plurality of modes for engine operation, comprising an engine body, a combustion chamber formed in the engine body, an intake air system for delivering intake air to the combustion chamber, a fuel delivery system mounted on the engine body to deliver a first fuel into the combustion chamber while the engine operates in a diesel mode and a homogeneous charge dual fuel transition mode, and to deliver a second fuel into at least one of the intake air system and the combustion chamber when the engine operates in a premixed charge compression ignition mode and in the homogeneous charge dual fuel transition mode. Column 5, lines 11-23. zur Loye further discloses that the engine also includes a control system adapted to transfer engine operation between the diesel mode and the homogeneous charge dual fuel transition mode and between the homogeneous charge dual fuel transition mode and the premixed charge compression ignition mode. Column 5, lines 23-28.

There is no language in zur Loye that discloses a dual fuel engine, the engine supplied with diesel fuel and at least one secondary fuel, the engine including one or more cylinders in which one or more pistons reciprocate, each of the one or more cylinders being provided with diesel injection means for injecting the diesel fuel into the cylinder during an appropriate stroke of the piston and at least one air inlet valve, the valve moving to an open condition during the appropriate stroke of the piston to

permit air flow therethrough. Neither is there any language in zur Loye that discloses that it is characterized that in each cylinder of the engine is further provided with secondary fuel injection means for injecting the secondary fuel into the cylinders, the secondary fuel injection means being independent of the diesel fuel injection means and air inlet valves. Thus, zur Loye does not disclose all of the limitations of claim 1, and thus zur Loye does not anticipate claim 1. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "a vehicle having a dual fuel engine fitted therein, said engine supplied with diesel fuel and at least one secondary fuel, said engine including one or more cylinders in which one or more pistons reciprocate, each of said one or more cylinders being provided with diesel injection means for injecting the diesel fuel into the cylinder during an appropriate stroke of the piston and at least one air inlet valve, said valve moving to an open condition during said appropriate stroke of the piston to permit air flow therethrough, characterized in that each cylinder of the engine is further provided with secondary fuel injection means for rejecting the secondary fuel into the cylinders, the secondary fuel injection means being independent of the diesel fuel injection means and air inlet valves" as recited in claim 29. The Examiner asserts that zur Loye discloses a secondary fuel injection means for injecting second fuel as a function of a load, which is independent from the first injection means and the inlet valve. Office Action (12/22/2006), page 2. Applicant respectfully traverses.

zur Loye instead discloses that the above objects and others are achieved by providing a multi-mode internal combustion engine capable of operating in a plurality of modes for engine operation, comprising an engine body, a combustion chamber formed in the engine body, an intake air system for delivering intake air to the combustion chamber, a fuel delivery system mounted on the engine body to deliver a first fuel into the combustion chamber while the engine operates in a diesel mode and a homogeneous charge dual fuel transition mode, and to deliver a second fuel into at least one of the intake air system and the combustion chamber when the engine operates in a premixed charge compression ignition mode and in the homogeneous charge dual fuel transition mode. Column 5, lines 11-23. zur Loye further discloses

that the engine also includes a control system adapted to transfer engine operation between the diesel mode and the homogeneous charge dual fuel transition mode and between the homogeneous charge dual fuel transition mode and the premixed charge compression ignition mode. Column 5, lines 23-28.

There is no language in zur Loye that discloses a vehicle having a dual fuel engine fitted therein, the engine supplied with diesel fuel and at least one secondary fuel, the engine including one or more cylinders in which one or more pistons reciprocate, each of the one or more cylinders being provided with diesel injection means for injecting the diesel fuel into the cylinder during an appropriate stroke of the piston and at least one air inlet valve, the valve moving to an open condition during the appropriate stroke of the piston to permit air flow therethrough. Neither is there any language in zur Loye that discloses that it is characterized that in each cylinder of the engine is further provided with secondary fuel injection means for injecting the secondary fuel into the cylinders, the secondary fuel injection means being independent of the diesel fuel injection means and air inlet valves. Thus, zur Loye does not disclose all of the limitations of claim 29, and thus zur Loye does not anticipate claim 29. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "an integrated control unit (ICU) for controlling the operation of a dual fuel engine, said engine supplied with diesel fuel and at least one secondary fuel, said engines including one or more cylinders in which one or more pistons reciprocate, each of said one or more cylinders being provided with diesel injection means for injecting the diesel fuel into the cylinder during an appropriate stroke of the piston and at least one air inlet valve said valve moving to an open condition during said appropriate stroke of the piston to permit air flow therethrough, each cylinder of the engine being further provided with secondary fuel injection means for injecting the secondary fuel into the cylinders, the integrated control unit providing independent control for the operation of the secondary fuel injection means and the diesel fuel injection means" as recited in claim 30. The Examiner asserts that zur Loye discloses a secondary fuel injection means for injecting second fuel as a function of a load, which is independent from the first

injection means and the inlet valve. Office Action (12/22/2006), page 2. Applicant respectfully traverses.

zur Loye instead discloses that the above objects and others are achieved by providing a multi-mode internal combustion engine capable of operating in a plurality of modes for engine operation, comprising an engine body, a combustion chamber formed in the engine body, an intake air system for delivering intake air to the combustion chamber, a fuel delivery system mounted on the engine body to deliver a first fuel into the combustion chamber while the engine operates in a diesel mode and a homogeneous charge dual fuel transition mode, and to deliver a second fuel into at least one of the intake air system and the combustion chamber when the engine operates in a premixed charge compression ignition mode and in the homogeneous charge dual fuel transition mode. Column 5, lines 11-23. zur Loye further discloses that the engine also includes a control system adapted to transfer engine operation between the diesel mode and the homogeneous charge dual fuel transition mode and between the homogeneous charge dual fuel transition mode and the premixed charge compression ignition mode. Column 5, lines 23-28.

There is no language in zur Loye that discloses an integrated control unit (ICU) for controlling the operation of a dual fuel engine, the engine supplied with diesel fuel and at least one secondary fuel, the engine including one or more cylinders in which one or more pistons reciprocate, each of the one or more cylinders being provided with diesel injection means for injecting the diesel fuel into the cylinder during an appropriate stroke of the piston and at least one air inlet valve, the valve moving to an open condition during the appropriate stroke of the piston to permit air flow therethrough. Neither is there any language in zur Loye that discloses that it is characterized that in each cylinder of the engine is further provided with secondary fuel injection means for injecting the secondary fuel into the cylinders, the integrated control unit providing independent control for the operation of the secondary fuel injection means and the diesel fuel injection means. Thus, zur Loye does not disclose all of the limitations of claim 30, and thus zur Loye does not anticipate claim 30. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "a method of converting a diesel engine to a dual fuel engine, said engine supplied with diesel fuel and at least one secondary fuel, said engine provided with one or more cylinders in which one or more pistons reciprocate with injection means for injecting diesel fuel into the cylinder during an appropriate stroke of the piston and at least one air inlet valve, said valve moving to an open condition during said appropriate stroke of the piston to permit air flow therethrough, characterized in that said method includes the step of providing each cylinder of the engine with secondary fuel injection means for injecting the secondary fuel into the cylinders, the secondary fuel injection means being provided independently to the diesel fuel injection means" as recited in claim 32. The Examiner asserts that zur Loye discloses a secondary fuel injection means for injecting second fuel as a function of a load, which is independent from the first injection means and the inlet valve. Office Action (12/22/2006), page 2. Applicant respectfully traverses.

zur Loye instead discloses that the above objects and others are achieved by providing a multi-mode internal combustion engine capable of operating in a plurality of modes for engine operation, comprising an engine body, a combustion chamber formed in the engine body, an intake air system for delivering intake air to the combustion chamber, a fuel delivery system mounted on the engine body to deliver a first fuel into the combustion chamber while the engine operates in a diesel mode and a homogeneous charge dual fuel transition mode, and to deliver a second fuel into at least one of the intake air system and the combustion chamber when the engine operates in a premixed charge compression ignition mode and in the homogeneous charge dual fuel transition mode. Column 5, lines 11-23. zur Loye further discloses that the engine also includes a control system adapted to transfer engine operation between the diesel mode and the homogeneous charge dual fuel transition mode and between the homogeneous charge dual fuel transition mode and the premixed charge compression ignition mode. Column 5, lines 23-28.

There is no language in zur Loye that discloses converting a diesel engine to a dual fuel, the engine supplied with diesel fuel and at least one secondary fuel, the engine including one or more cylinders in which one or more pistons reciprocate,

each of the one or more cylinders being provided with diesel injection means for injecting the diesel fuel into the cylinder during an appropriate stroke of the piston and at least one air inlet valve, the valve moving to an open condition during the appropriate stroke of the piston to permit air flow therethrough. Neither is there any language in zur Loye that discloses providing each cylinder of the engine with secondary fuel injection means for injecting the secondary fuel into the cylinders, the secondary fuel injection means being provided independently to the diesel fuel injection means. Thus, zur Loye does not disclose all of the limitations of claim 32, and thus zur Loye does not anticipate claim 32. M.P.E.P. §2131.

Claims 2-28, 31 and 33-34 each recite combinations of features of independent claim 1, and hence claims 2-28, 31 and 33-34 are not anticipated by zur Loye for at least the above-stated reasons that claim 1 is not anticipated by zur Loye.

Claims 2-28, 31 and 33-34 recite additional features, which, in combination with the features of the claims upon which they depend, are not anticipated by zur Loye.

For example, zur Loye does not disclose "characterized in that control of the operation of the secondary fuel injection means is independent of the operation of the diesel injection means" as recited in claim 2. The Examiner simply asserts that Zur Loye discloses the above-cited claim limitation without providing any evidence. In order to establish a *prima facie* case of anticipation, the Examiner must provide evidence that each and every claim limitation is found within Zur Loye. M.P.E.P. §2131. Since the Examiner has not provided any such evidence, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 2. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that the secondary fuel injection means are controlled to introduce the secondary fuel in the one or more cylinders on the appropriate stroke of the piston reciprocating therein" as recited in claim 3. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or

inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 3. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that the engine is provided with two fuel supply tanks for the diesel fuel and secondary fuel respectively, each fuel being delivered to the engine through separate supply means" as recited in claim 4. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 4. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that injection of the secondary fuel into the one or more cylinders occurs substantially simultaneously to injection of the diesel fuel into said cylinders" as recited in claim 5. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 5. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that means are provided for sensing and/or controlling one or more engine operating conditions" as recited in claim 6. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of

anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 6. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that sensing means are provided for sensing any or any combination of exhaust emissions, exhaust gas particulate density, throttle position, temperature of the secondary fuel being delivered to the engine and/or the engine itself, turbo pressure, airflow velocity and pressure, secondary fuel gauge, engine speed, position of a flow control means and/or position of the diaphragm in the vaporizing means" as recited in claim 7. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 7. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that flow control means are provided for regulating the amount of secondary fuel flowing into the engine" as recited in claim 8. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 8. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that control of the flow of the secondary fuel to the secondary fuel injection means by said flow control means is regulated dynamically according to one or more sensed engine operating characteristics" as recited in claim 9. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 9. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that the flow control means are provided in fuel supply pipes supplying secondary fuel to the engine" as recited in claim 10. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 10. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that an output of the flow control means is coupled to an input of a multi-output divider for dividing a singular flow of secondary fuel into a plurality of flows, the number of flows corresponding to the number of cylinders in the engine and each of said flows being coupled to the secondary fuel injection means" as recited in claim 11. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the

Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 11. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that the flow control means includes a piston, the position of which is changed to alter the amount of secondary fuel flowing therethrough" as recited in claim 12. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 12. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that vaporizing means is provided in fuel supply means for delivering the secondary fuel to the engine" as recited in claim 13. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 13. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that an integrated control unit (ICU) is provided for controlling one or more engine operating conditions" as recited in claim 14. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation,

the Examiner has not established a *prima facie* case of anticipation in rejecting claim 14. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that the ICU includes any or any combination of: a) one or more inputs in communication with sensing means disposed in and/or around the engine for sensing one or more operating characteristics thereof; b) means capable of receiving and/or processing a user input; c) calibration means through which maintenance and adjustment of one or more algorithms and/or operating parameters of the ICU can be achieved; d) one or more outputs for displaying data relating to the operating characteristics of the engine; e) one or more outputs for connection to one or more dynamically adjustable components of the engine for dynamic control thereof during engine operation" as recited in claim 15. The Examiner has not specifically addressed these limitations. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed these limitations, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 15. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that the ICU controls the flow of secondary fuel through a diaphragm in the vaporizing means and/or the temperature of a heating element provided therein" as recited in claim 16. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 16. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that the ICU controls both the flow control means and the diaphragm in the vaporizing means for regulating the flow of the secondary fuel through each component" as recited in claim 17. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 17. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that operation of the ICU is substantially continuous" as recited in claim 18. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 18. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that the ICU includes memory means for storing one or more pre-determined engine operating conditions therein" as recited in claim 19. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 19. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that the memory means includes one or more algorithms which can be executed by processing means when pre-determined conditions are met" as recited in claim 20. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 20. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that said pre-determined conditions include any or any combination of when the engine is started, when the secondary fuel runs out and/or when the load on the engine reaches a pre-determined level or is outside a pre-determined level" as recited in claim 21. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 21. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that the calculations resulting from executing said algorithms are used to set the vaporizer diaphragm or piston of the flow control means to an optimum level for the detected operating conditions" as recited in claim 22. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation,

the Examiner has not established a *prima facie* case of anticipation in rejecting claim 22. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that at least one recalibration algorithm is provided for allowing the ICU to adjust its operation as the engine and its associated component undergo wear" as recited in claim 23. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 23. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that data input from sensing means to the ICU is compared to pre-determined engine operating conditions and the ICU outputs data to adjust the flow of the secondary fuel to the engine and/or one or more other engine operating parameters" as recited in claim 24. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 24. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that a secondary fuel limiter is provided to prevent "over-powering" of the engine" as recited in claim 25. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987).

Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 25. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that emergency shut off valves are provided in fuel supply means which deliver the diesel fuel and the secondary fuel to the engine" as recited in claim 26. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 26. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that traction control means are provided and, on detection of a loss of traction, the supply of secondary fuel to the engine is reduced or cut off" as recited in claim 27. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 27. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that the secondary fuel is LPG." as recited in claim 28. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation,

the Examiner has not established a *prima facie* case of anticipation in rejecting claim 28. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that control of the operation of at least said secondary fuel injection means is in response to one or more sensed engine operating characteristics" as recited in claim 31. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 31. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that the ICU controls the flow of secondary fuel through a diaphragm in the vaporizing means and/or the temperature of a heating element provided therein" as recited in claim 33. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 33. M.P.E.P. §2131.

Applicant further asserts that zur Loye does not disclose "characterized in that the ICU controls both the flow control means and the diaphragm in the vaporizing means for regulating the flow of the secondary fuel through each component" as recited in claim 34. The Examiner has not specifically addressed this limitation. The Examiner is reminded that in order to establish a *prima facie* case of anticipation, the Examiner must provide a single prior art reference that expressly or inherently describes each and every element as set forth in the claim. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987).

Since the Examiner has not addressed this limitation, the Examiner has not established a *prima facie* case of anticipation in rejecting claim 34. M.P.E.P. §2131.

As a result of the foregoing, Applicant respectfully asserts that not each and every claim limitation was found within zur Loye, and thus claims 1-34 are not anticipated by zur Loye. M.P.E.P. §2131.

II. CONCLUSION:

As a result of the foregoing, it is asserted by Applicant that claims 1-34 in the Application are in condition for allowance, and Applicant respectfully requests an allowance of such claims. Applicant respectfully requests that the Examiner call Applicant's attorney at the below listed number if the Examiner believes that such a discussion would be helpful in resolving any remaining issues.

Respectfully submitted,

WINSTEAD P.C.

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